



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Annual Statistical Report  
**2005 Water Management Act Program**  
**Annual Report Form**

For Public Water Suppliers: Reporting Period 1/1/2005-12/31/2005

WMA:

PWS ID#

Name

City/Town

Public water suppliers (PWSs) that have a Water Management Act Program (WMA) registration and/or permit must complete this 2005 Annual Report Form for Public Water Suppliers (ARFPWS). All other PWSs must complete the ARFPWS if included in the envelope that contains the Drinking Water Program's Annual Statistical Report form.

PWSs are required to report to DEP, in January of each year, the breakdown of water used by category. (310 CMR 22.15(5)). Annual reports are required to be submitted by PWSs with WMA registrations (310 CMR 36.11). WMA permit holders are required to submit an annual statement (310 CMR 36.33(1)).

If you have any questions, or pump 100,000 gallons a day or greater, and are not registered or permitted, please contact Water Management Act Program staff (Patrick Rogers) at 617-292-5658.

**Important:**

When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



## A. General Information

### 1. Permit Information

If applicable, please review the PWS WMA permit and identify those conditions that apply. Please attach any reports that may be required, or indicate date sent to regional office.

Permit Number

Registration Number

Watershed

Permit Number

Registration Number

Watershed

Permit Number

Registration Number

Watershed

Table A: Conditions

| Type of Condition         | Required (Y/N)  | Date Report sent to DEP or Regional Office | Report Attached          |
|---------------------------|---|--|--------------------------|
| a. Stream Flow Monitoring | <input type="checkbox"/> Y <input type="checkbox"/> N |  | <input type="checkbox"/> |
| b. Wetlands Monitoring    | <input type="checkbox"/> Y <input type="checkbox"/> N |  | <input type="checkbox"/> |
| c. Other: _____           | <input type="checkbox"/> Y <input type="checkbox"/> N |  | <input type="checkbox"/> |

### 2. Leak Detection Survey Requirements: Please complete the following table outlining annual leak detection work.

Table B: Leak Detection Work – Water Mains and Appurtenances

|                                | Source(s) of Supply<br>Transmission Water Mains | Distribution System<br>Water Mains |
|--------------------------------|---|------------------------------------|
| Total miles of water mains     |   |                                    |
| Miles surveyed this year       |   |                                    |
| Number of leaks found          |   |                                    |
| Gross gpm lost                 |   |                                    |
| Number of repairs              |   |                                    |
| Estimated annual gallons saved | in MGY (millions of gallons per year)           | MGY                                |



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**A. General Information (cont.)**

3. Water Conservation and Demand Management

- a. Were water conservation tips or water saving messages sent out with bills or as a separate mailing to all metered accounts? ☐ Yes ☐ No
- b. Does the PWS have a bylaw or ordinance, rule or regulation that can be utilized to implement mandatory outside water use restrictions? ☐ Yes ☐ No
- c. If yes, were water restrictions implemented this year? ☐ Yes ☐ No

What type of water use restrictions were implemented?

Outdoor water use restrictions:

☐ Even/odd day watering

☐ Hourly Restriction

☐ Ban on outside use

☐ Other

Specify

- d. Did you submit or notify the DEP of water restrictions? ☐ Yes ☐ No
- e. Does the PWS calibrate master meters that record sources of supply and finished water volumes in accordance with AWWA specifications? ☐ Yes ☐ No

1. Venturi meters calibrated

Year

2. Source inline meters calibrated

Year

**B. Sources of Supply Information**

1. Water Volumes

The following table allows for the computation of the annual volumes by watershed for the sources of supply. This information may have been derived in Section E of the ASR. If so this table does not have to be completed; proceed to Question 2.

Table C: Annual Source Totals

|         | A.<br>Watershed Name | B.<br>Watershed Name | C.<br>Watershed Name |
|---------|----------------------|----------------------|----------------------|
| Totals: | withdrawals (mg)     | withdrawals (mg)     | withdrawals (mg)     |



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**B. Sources of Supply Information (cont.)**

2. Calculation of Daily Average

Take Total Volume from Table C and calculate the daily average from each watershed. This is done by dividing the Total Volume by 365 days to obtain the daily average in million gallons per day (mgd).

Table D: Daily Average

| Watershed      | Total Volume | / 365 = | Daily Average (mgd) |
|----------------|--------------|---------|---------------------|
| a.             |              |         |                     |
| Watershed Name | mgd          |         | mgd                 |
| b.             |              |         |                     |
| Watershed Name | mgd          |         | mgd                 |
| c.             |              |         |                     |
| Watershed Name | mgd          |         | mgd                 |

3. Authorized Withdrawals

Fill in the appropriate columns (in mgd) from the PWS Water Management Act Program registration and/or permit for each watershed.

Table E: Permitted Annual Volume

| Watershed Name | Registered Volume (R) | Permitted Volume (P) | Totals (R+P) | Daily Average from Table D | Watershed Difference (+ or -) * |
|----------------|-----------------------|----------------------|--------------|----------------------------|---------------------------------|
| a.             | mgd                   | mgd                  | mgd          | mgd                        | mgd                             |
| b.             | mgd                   | mgd                  | mgd          | mgd                        | mgd                             |
| c.             | mgd                   | mgd                  | mgd          | mgd                        | mgd                             |
| TOTAL          |                       |                      |              | mgd                        |                                 |

\* Watershed Difference = (R +P) – the Daily Average (over (+) or under (-) authorized amounts)

**C. Residential Gallons Per Capita Day**

1. Distribution System Annual Volumes

This section of the report is used to calculate residential gallons per capita day (RGPCD). Please obtain the annual volume for each metered account. The Annual Volume can be obtained from Section D Question 2 of the 2005 Annual Statistical Report. It is recognized that metered accounts are read on a cycle. Annual calculations will result in an average result.



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**C. Residential Gallons Per Capita Day (cont.)**

Table F: Metered Accounts

| Type *           | Number of Accounts | Population Served<br>(from Appendix Sec.2) | Annual Volume (mgy) |
|------------------|--------------------|--|---------------------|
| Residential      | --                 | --   | --                  |
| a. Single Family | _____              | _____                                      | _____ mgy           |
| b. Multi Family  | _____              | _____                                      | _____ mgy           |
| Agriculture      | _____              | --   | _____ mgy           |
| Commercial       | _____              | --   | _____ mgy           |
| Industrial       | _____              | --   | _____ mgy           |
| Other            | _____              | --   | _____ mgy           |
| <b>Totals:</b>   | _____              | _____                                      | _____ mgy           |

\* Definitions of type for metered accounts from the ASR (Section D Question 2) are found in Section 1 of the Appendix of this form.

2. How to calculate Residential Gallons Per Capita Day (RGPCD)

RGPCD is calculated from the volumes of water used annually by single- and multi-family homes.

Residential use is determined by taking annual residential volumes (in millions of gallons per year) for single-family homes or multi-family homes, dividing by 365 days in the year and then dividing that number by the population served.

Table G: RGPCD

| Type of Housing (see<br>Appendix Sec. 1) | Annual Volume, from<br>Table F | / Days (365) | / Population Served *<br>(from Table F) | RGPCD |
|--|--------------------------------|--------------|---|-------|
| Single Family                            | _____ mgy                      | / 365        | _____                                   | _____ |
| Multi Family                             | _____ mgy                      | / 365        | _____                                   | _____ |
| <b>Totals:</b>                           | _____ mgy                      | / 365        | _____                                   | _____ |

\* How to determine Population Served is found in Section 2 of the Appendix to this form.

3. By what method was Population Served used to determine RGPCD?

(See Appendix Section 2) Method: ☐ a ☐ b ☐ c

\_\_\_\_\_ Average Household Size #



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## Appendix

Please use this Appendix as appropriate. The Appendix does not have to be returned with the form.

### Section 1: Definitions of Metered Accounts

To categorize metered account volumes into the appropriate category, please utilize the following definitions.

*Residential housing* – Includes all of the following types of uses.

1. Single Family Homes – Residences designed for single families.
2. Multi Family – Those residential homes that include apartments, duplexes, condominiums, senior and public housing and multi-deckers.
3. Mobile Home – Mobile Home units that are the primary residence. Mobile homes are counted as Multi Family homes.

*Agriculture*: Nurseries, farms, cranberry bogs.

*Industrial and Commercial*

Medical buildings, retail stores, industrial manufactures, car washes, universities or college buildings, golf courses, rest or nursing homes, prisons, hospital, dormitories

*Other*

Elementary and secondary schools, municipal buildings, and any 'Other' undefined category where a metered or un-metered account exists.

### Section 2: Methods to Determine Population Served

Population Served for residential accounts are determined by several methods. One method requires using the Average Household Size.

Average Household Size is found in the demographics profile for each Massachusetts community, provided through the Department of Housing and Community Development. This link can be found at <http://www.mass.gov/dhcd/ipprofile/default.htm>.

To obtain Average Household Size, go to <http://www.mass.gov/dhcd/Temp/03/HsMgData/default.htm> and click on [US Census Population and Housing](#). In the "Fast Access" box, type in your community name and select Massachusetts. Go to Average Household Size and use that number to calculate Population Served.

Single-Family Housing: two methods may be used to calculate single family housing size:

**Method a:** If the PWS services the entire municipality: use the latest town or city Annual Census from the clerk's office for population served.

**Method b:** For those public water supplies that do not service the entire municipality: use the number of metered accounts that are classified as single family housing and multiply by the Average Household Size per account.

Multi-Family Housing: one method is used to calculate multi-family housing population.

**Method c:** Use the number of metered accounts that are classified as multi-family and multiply by the Average Household Size per account.



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**Appendix (cont.)**

**Section 3: Future Water Meter Billing Account**

In order for Public Water Suppliers to break out distribution systems metered accounts annual volume in billing software, the following metered account codes are suggested to be utilized for future use.

| Primary Residential |    | Secondary residential |    | Industrial/Commercial          |    |
|---------------------|----|-----------------------|----|--------------------------------|----|
| Single family Homes | SF | Rest/Nursing Homes    | RH | Medical Bldgs.                 | MB |
| Apartments          | RA | Prisons               | P  | Retail Stores                  | RS |
| Condominiums        | RC | Hospitals             | H  | Industrial Mfg.                | IM |
| Duplexes            | RD | Dormitories           | D  | Car Washes                     | CW |
| Mobile Homes        | MH |                       |    | Univ/college Bldgs. (no dorms) | UC |
| Multi Decker        | MD | <b>Agriculture</b>    |    | Golf Course                    | GC |
| Public Housing      | PH | Nurseries             | N  |                                |    |
| Senior Housing      | SH | Farms                 | F  | <b>Other</b>                   |    |
|                     |    | Cranberry Bogs        | CB | School Bldgs                   | SB |
|                     |    |                       |    | Municipal Bldgs.               | MB |
|                     |    |                       |    | Other Uses                     | OU |